

PALVIAINEN – Appn. No. 09/446,508

REMARKS

Applicant respectfully requests reconsideration and allowance of the present application in view of the following remarks. By this Amendment, claims 1-22 are pending, of which claims 1, 2, 4, 5, 7 and 11 are independent claims and claims 15-22 are newly presented.

Entry of this Amendment is proper under 37 CFR §1.116 since the Amendment: (a) places the application in condition for allowance (for the reasons discussed herein); (b) does not raise any new issue requiring further search and/or consideration (since the amendments add more clarity to the claims and amplify issues contained in the original claims); (c) satisfies a requirement of form asserted in the previous Office Action; and (d) places the application in better form for appeal, should an appeal be necessary. The Amendment is necessary and was not earlier presented because it was made in response, at least in part, to arguments raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

Claims 1-14 were rejected under 35 U.S.C. 102(b) over Joong et al. (U.S. Patent No. 6,134,433; hereafter “Joong”). The rejection is respectfully traversed because Joong fails to disclose, teach or suggest all the features recited in the rejected claims. For example, Joong fails to disclose, teach or suggest a method or equipment used for call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding. Specifically, Joong does not disclose, teach or suggest implementing call routing to a forwarding number by selecting one of several alternative types of lines based on a basic service code, as recited in independent claims 1, 2, 4, 7 and 11. Joong also fails to disclose, teach or suggest a home location register connected to a first exchange in a mobile system, wherein the home location register is arranged to transmit a basic service code, which indicates necessary properties of the line which should be selected from several alternative types of lines having different properties in routing a call, as recited in independent claim 5.

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The present invention relates to a problem that occurs in connection with call forwarding when a subscriber has several different services available, e.g., voice calls, data calls and facsimile data calls. In such a situation it is important to ensure that an incoming call is routed to a forwarding number which is capable of handling that kind of call. This means that voice calls should be routed to a forwarding number where the subscriber can receive the voice call and, similarly, facsimile data calls should be routed to a forwarding number providing facsimile data service for the subscriber. It is also important that incoming calls are routed using such connections or lines that are best suited for the type of calls.

An exchange implementing call routing may have several available optional lines that could be used to route the call to the forwarding number. These lines may have different properties. However, a data call should be routed via a line that offers a high quality and/or capacity. On the other hand, it is usually cheaper to route a voice call via a line that offers a lower quality and/or capacity, as the quality/capacity in this case is sufficient for a voice call (but not for a data call). Thus, a selection of one of several alternative types of lines based on a basic service code allows each call to be routed using connections or lines that are best suited for the type of calls.

The independent claims 1, 2, 4, 5 7 and 11 recite an invention that provide a solution that makes it possible to ensure that an incoming call is routed to a suitable forwarding number by using several suitable lines. This is, according to the independent claims, achieved with a solution wherein a subscriber database, in response to a subscriber data request, transmits a response message to the exchange which carries out the routing of the call. This response message includes a forwarding number and a basic service code. The routing exchange selects a suitable line among several alternative types of lines based on the basic service code to implement the call routing.

For example, although voice calls and data calls can be routed over both lines of high quality/capacity or low quality/capacity, certain advantages can be obtained by routing voice

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calls to a line of low quality/capacity/cost and data calls over a line of high quality/capacity/cost. Thus, selection a suitable line (e.g., high or low quality/capacity/cost) among several alternative types of lines (e.g., having different qualities/capacities) can based on the basic service code to implement the call routing as claimed.

To the contrary, Joong merely teaches a system and method for routing different call types to forwarding numbers capable of handling such call types on a single line. Joong fails to disclose, teach or suggest call routing by selecting a suitable line among several alternative types of lines based on the basic service code, as recited in independent claims 1, 4, 5, 7 and 11. In fact, Joong fails to even suggest that alternative types of lines might exist that could be used in the call routing to the forwarding number (see Fig. 1 of Joong in which no alternative types of lines are provided).

Although Joong appears to teach the use of several different service codes for analog speech, digital speech, asynchronous data and G3 fax, Joong merely teaches that these service codes are used to ensure that a specific call is routed to a forwarding number capable of handling the call type. However, Joong does not disclose, teach or suggest call routing by selecting a suitable line among several alternative types of lines based on the service codes. For example, Joong does not teach or suggest that several alternative types of lines having different qualities (e.g., high or low quality/capacity/cost) exist for use with analog speech, digital speech, asynchronous data and G3 fax. In fact, Joong could use the same type of line (same quality/capacity/cost) for each of analog speech, digital speech, asynchronous data and G3 fax calls because Joong is merely concerned with routing the call to a forwarding number capable of handling the call type, not with selecting a line having certain qualities based on a basic service code.

For the reasons set forth above, independent claims 1, 2, 4, 5, 7 and 11 and all the remaining claims dependent thereon (i.e., claims 3, 6,-10 and 12-14) are patentable over

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Joong. Accordingly, reconsideration and withdrawal of the rejection of claims 1-14 under 35 U.S.C. §102(b) is respectfully requested.

New claims 15-22 each depend from one of independent claims 1, 2, 4, 5, 7 and 11. Applicant submits new claims 15-22 define over Joong for at least the same reasons as set forth above with respect to independent claims 1, 2, 4, 5, 7 and 11, in addition to their recitation of additional patentable subject matter. New claims 15-20 recite that the basic service includes different call types for the subscriber related to the call and that different call types have a single called party number. New claim 21 further defines the necessary properties of the line which should be selected in routing the call to include at least one of line quality and cost of the call. New claim 22 further defines the selecting of the alternative types of lines is based on at least one of line quality and cost of the call. No new matter has been added.

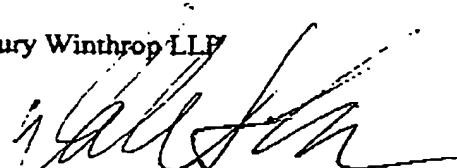
All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

If any points remain in issue which may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Attached hereto is an Appendix showing changes made to independent claims 1, 2, 4, 5, 7 and 11 and including a list of new claims added by this Amendment.

Respectfully submitted,

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Received from <+703 905 2500> at 4/18/03 6:45:34 PM [Eastern Daylight Time]

PALVIAINEN -- Appln. No. 09/446,508APPENDIX"Version with markings to show changes made"IN THE CLAIMS:

Please amend claims 1, 2, 4, 5, 7 and 11 as follows:

1. (Thrice Amended) A method for implementing call forwarding in a mobile system comprising at least one forwarding exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, each type of line having different qualities, and at least one subscriber database for storing the subscriber data related to the call forwarding, the method comprising:

receiving at the forwarding exchange a call set-up message addressed to a subscriber in the mobile system;

performing a subscriber data request to the subscriber database;

transmitting a response message from the subscriber database to the forwarding exchange, the message comprising data indicating the call forwarding, a forwarding number and a basic service code; and

implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

2. (Thrice Amended) A method for implementing call forwarding in a mobile system comprising at least a first exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding and at least one home location register connected to the first exchange for storing the subscriber data related to the call forwarding, each type of line having different qualities, the method comprising:

receiving at the first exchange a call set-up message addressed to a subscriber in the mobile system;

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requesting routing information from the home location register;
transmitting a response message from the home location register to the first exchange, the message comprising data indicating the call forwarding, a forwarding number, and [a] the basic service code indicating the basic service related to the call; and
implementing call routing to the forwarding number by selecting one of said alternative types of lines based on said basic service code.

4. (Thrice Amended) A method for implementing call forwarding in a mobile system comprising at least one exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding and at least one visitor location register for storing the subscriber data related to the call forwarding, each type of line having different qualities, the method comprising:

receiving at the exchange a call set-up message addressed to a subscriber in the mobile system;

providing a subscriber data request to the visitor location register connected to the exchange;

transmitting a response message from the visitor location register to the exchange, the message comprising data indicating the call forwarding, a forwarding number and [a] the basic service code; and

implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

5. (Thrice Amended) A home location register connected to a first exchange in a mobile system, wherein the home location register is arranged to transmit a basic service code to the first exchange in connection with a response message to a routing information request, the basic service code indicating the necessary properties of the line which should be

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selected from several alternative types of lines having different properties based on the basic service code in routing the call.

7. (Thrice Amended) A first exchange in a mobile system, comprising means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities, wherein the exchange is arranged to derive [a] the basic service code from the call-set up message or from a response message transmitted by the home location register to the first exchange in response to a subscriber data request; and the exchange is arranged to route the call to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

11. (Thrice Amended) An exchange in a mobile system, comprising means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities, wherein the exchange is arranged to derive [a] the basic service code from basic service data that indicates the basic service of the call and that is transmitted in connection with the call set-up message or a response message transmitted from the visitor location register to the exchange in response to a subscriber data request, and the exchange is arranged to perform routing to the forwarding number by selecting one of said alternative types of lines based on said basic service code.

New claims 15-22 have been added.